State of the Workforce Report X:
Region 8

Funding for this project was provided by:

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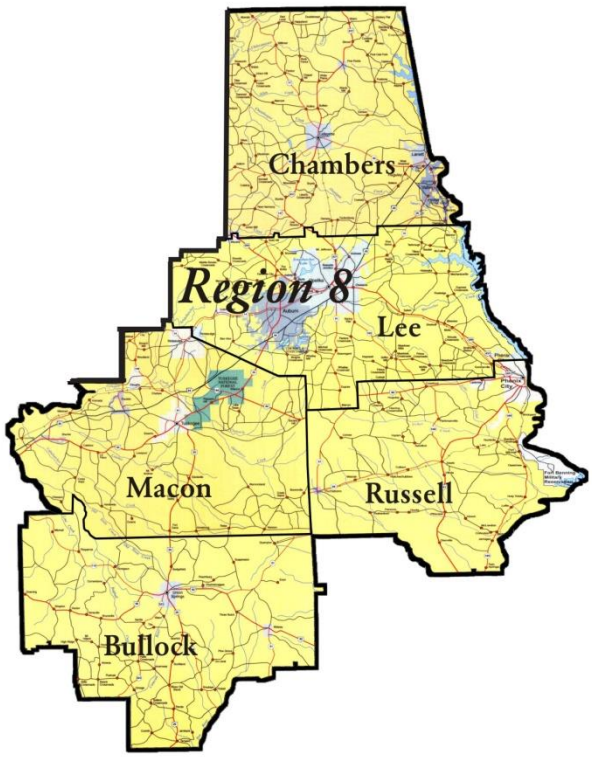

April 2016

Center for Business and Economic Research
Culverhouse College of Commerce

University of Alabama Center for Economic Development

Institute for Social Science Research

THE UNIVERSITY OF ALABAMA

State of the Workforce Report X: Region 8

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by

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Acknowledgments

Completion of this project was due to the timely contributions of many people. We are very grateful to the Labor Market Information (LMI) Division of the Alabama Department of Labor (ADOL). In addition to financial support from ADOL, LMI provided significant staff time and this report would not have been possible without large amounts of data from LMI.

Many thanks also to our colleagues at the Center for Business and Economic Research, the Capstone Poll, the Institute for Social Science Research, and the University of Alabama Center for Economic Development for their help on various phases of this research project. Last, but not least, much gratitude is owed to the thousands of Alabamians who responded to the extensive survey on the state's workforce and related issues, as well as to the community and industry leaders whose work on these issues provides the critical data required in reports of this kind.

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Contents

Summary

- This report analyzes workforce supply and demand issues using available metrics of workforce characteristics for Workforce Development Region 8 and presents some implications and recommendations.

- Region 8 had a 5.7 percent unemployment rate in March 2016, with 7,101 unemployed. An underemployment rate of 25.3 percent for 2015 means that the region has 36,692-strong available labor pool that includes 29,591 underemployed workers who are looking for better jobs and are willing to commute longer for such jobs.

- More job opportunities in the surrounding regions and Georgia increased net out-commuting from 8,673 in 2005 to 16,618 in 2014. Regional commute times and distances were up in 2015 from 2014 implying that congestion worsened. Congestion is likely to be an issue as the region recovers from the last recession and therefore continuous maintenance and development of transportation infrastructure and systems is important.

- By sector the top five employers in the region are educational services; manufacturing; retail trade; health care and social assistance; and accommodation and food services. These five industries provided 53,261 jobs, 67.4 percent of the regional total in the first quarter of 2015. Three of the leading employers paid higher wages than the region's $2,644 average monthly. Economic development should aim to diversify and strengthen the region's economy by retaining, expanding, and attracting more high-wage providing industries; workforce development should focus on preparing workers for these industries.

- On average 3,683 jobs were created per quarter from second quarter 2001 to first quarter 2015 and quarterly net job flows averaged 426. Job creation is the number of new jobs that are created either by new businesses or through expansion of existing firms. Net job flows reflect the difference between current and previous employment at all businesses.

- The top five high-demand occupations are Registered Nurses; Team Assemblers; Helpers—Production Workers; General and Operations Managers; and Licensed Practical and Licensed Vocational Nurses.

- The top five fast-growing occupations are Aircraft Mechanics and Service Technicians; Health Educators; Personal Care Aides; Social and Community Service Managers; and Market Research Analysts and Marketing Specialists.

- The top 50 high-earning occupations are mainly in management, health, engineering, computer, postsecondary education, and science fields and have a minimum salary of $71,301. Five of the top 10 are health related occupations, two are in postsecondary education, and two more are in social sciences and related fields.

- Of the top 40 high-demand, the top 20 fast-growing, and 50 high-earning occupations, four belong to all three categories. Twelve occupations are both high-demand and fast-growing. Fifteen occupations are in high-demand and high-earning.

- Of the region's 570 occupations, 30 are expected to decline over the 2012 to 2022 period. Twenty occupations are expected to sharply decline by at least six percent, with each losing a minimum of 10 jobs. Education and training for these occupations should slow accordingly.

- Skill and education requirements for jobs keep rising. Educational and training requirements of high-demand, fast-growing, and high-earning occupations demonstrate the importance of education in developing the future workforce. In the future, more jobs will require postsecondary education and training at a minimum.

- The importance of basic skills generally and for high-demand, high-growth, and high-earning jobs indicates a strong need for training in these skills. For Region 8 the pace of training needs to increase for technical, systems, and two basic (science and mathematics) skills. The scale of training should be raised for basic and social skills. Ideally, all high school graduates should possess basic skills so that postsecondary and higher education can focus on other and more complex skills. Employers should be an integral part of planning for training as they can help identify future skill needs and any existing gaps.

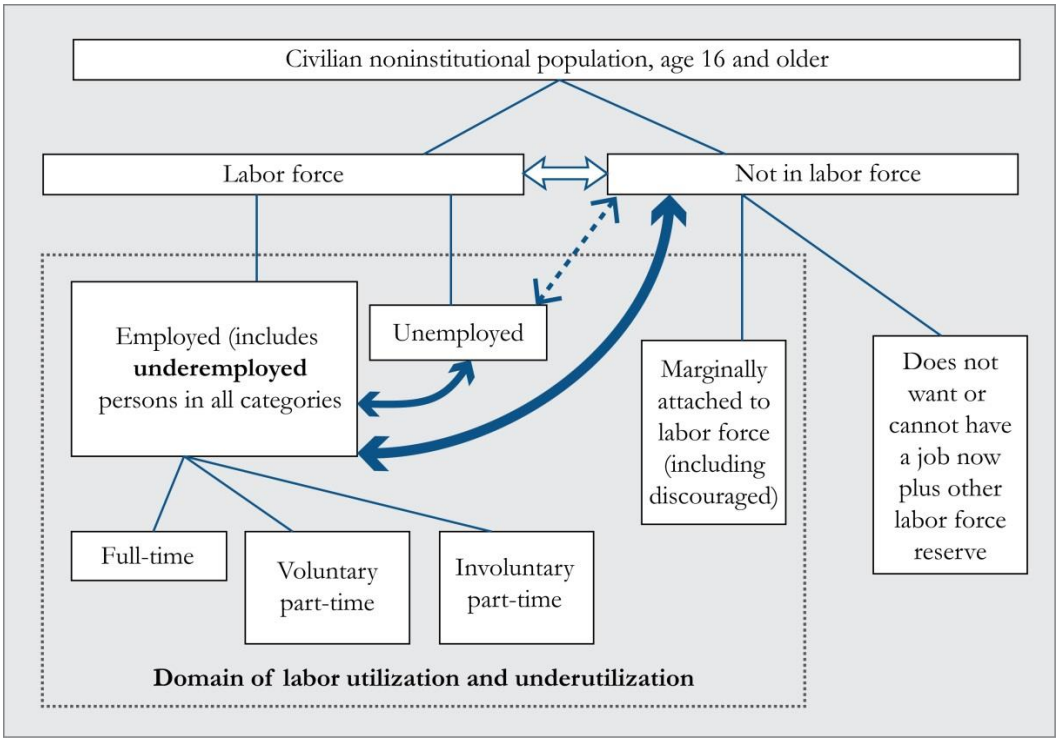
- From a 2012 base, worker shortfalls of about 9,500 and 15,000 are expected for 2022 and 2030, respectively. This will demand a focus on both worker skills and the expected shortfall through 2030. Worker shortfalls in critical occupations will also need to be addressed continuously. Strategies to address skill needs and critical occupation shortfalls should aim to raise worker productivity and increase labor force participation and might include: (1) improvements in education and its funding; (2) continuation and enhancement of programs to assess, retrain, and place dislocated workers; (3) focus on hard-to-serve populations (e.g. out-of-school youth); (4) lowering the high school dropout rate; (5) use of economic opportunities to attract new and younger residents; (6) encouragement of older worker participation in the labor force; and (7) facilitation of in-commuting.

- Improving education is important because (i) a highly educated and productive workforce is a critical economic development asset, (ii) productivity rises with education, (iii) educated people are more likely to work, and (iv) it yields high private and social rates of return on investment. Workforce development must view all of education and other programs (e.g. adult education, career technical training, worker retraining, career readiness, etc.) as one system. Funding to support workforce development may require tax reform at state and local levels and should provide for flexibility as workforce needs change over time and demand different priorities. Publicizing both private and public returns to education can encourage individuals to raise their own educational attainment levels, while also promoting public and legislative support for education.

- Higher incomes that come with improved educational attainment and work skills will help to increase personal income for the region as well as raise additional local (county and city) tax revenues. This is important, especially for a region whose per capita income is below the state average.

- Both workforce development and economic development are very crucial in building a strong and well-diversified regional economy. Indeed, one cannot achieve success without the other.

Labor Utilization and Supply Flows



Source: Addy et al[1] and Canon et al[2]

The chart above presents labor utilization and supply flows that explain labor market dynamics in view of recent study findings. The civilian noninstitutional population age 16 and above is comprised of participants in the labor force and nonparticipants. The labor force is made of employed and unemployed persons; the unemployed do not have a job but are actively searching for work. Employed persons include fully employed and underemployed persons in all categories of work (full-time, voluntary part-time, and involuntary part-time). Nonparticipants in the labor force include retirees (voluntary and involuntary), people who do not want to or cannot work for various reasons (e.g., disability, caring for family members, in school or training, etc.), discouraged workers, and other labor force reserves. It has been suggested that a subgroup of nonparticipants referred to as the "waiting group" is more likely than the rest of the nonparticipants to take a job if wages and conditions are satisfactory, but they do not actively search for work. New evidence has shown that between January 2003 and August 2013, the flow of nonparticipants into employment was 1.6 times that of unemployed persons transitioning into employment, which may be due to the presence of the waiting group[1, 2]. Nonparticipant flows to employment are larger in services, management, and professional occupations while unemployed flows to employment are higher in physically intensive occupations such as construction workers and miners. Industry effects should vary by the type and number of occupations they contain. This finding enhances the common understanding of labor market dynamics and influences workforce availability and skills gap analyses.

[1] Addy, S.N., Bonnal, M., and Lira, C. (2012). Towards a More Comprehensive Measure of Labor Underutilization: The Alabama Case, *Business Economics*, vol. 47(3).
[2] Canon, M.E., Kudlyak, M., and Reed, M. (2014). Not Everyone Who Joins the Ranks of the Employed was "Unemployed", *The Regional Economist*, January.

Workforce Supply

Labor Force Activity

The labor force includes all persons in the civilian noninstitutional population who are age 16 and over and who have a job or are actively looking for one. Typically, those who have no job and are not looking for one are not included (e.g. students, retirees, the disabled, and discouraged workers). Table 8.1 shows labor force information for Region 8 and its five counties for 2015 and March 2016.[3]

Table 8.1 Region 8 Labor Force Information

	2015 Annual Average			
	Labor Force	Employed	Unemployed	Rate (%)
Bullock	4,773	4,402	371	7.8
Chambers	15,100	14,192	908	6.0
Lee	71,548	67,888	3,660	5.1
Macon	7,978	7,334	644	8.1
Russell	24,283	22,823	1,460	6.0
Region 8	123,682	116,639	7,043	5.7
Alabama	2,146,157	2,015,189	130,968	6.1
United States	157,130,000	148,833,000	8,296,000	5.3
	March 2016			
	Labor Force	Employed	Unemployed	Rate (%)
Bullock	4,684	4,385	299	6.4
Chambers	15,015	14,136	879	5.9
Lee	72,151	68,287	3,864	5.4
Macon	7,891	7,270	621	7.9
Russell	24,275	22,837	1,438	5.9
Region 8	124,016	116,915	7,101	5.7
Alabama	2,156,616	2,023,744	132,872	6.2
United States	158,854,000	150,738,000	8,116,000	5.1

Source: Alabama Department of Labor and U.S. Bureau of Labor Statistics.

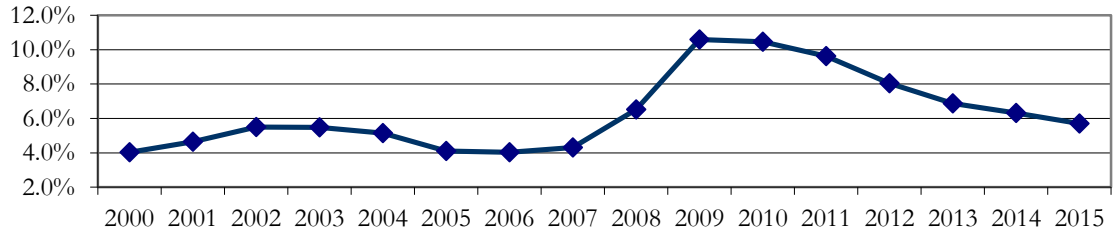
The recession that began in 2007 increased the number of unemployed people and sharply raised county unemployment rates. Recovery from the recession has been slow. County unemployment rates have changed from a range of 5.1 percent to 8.1 percent for 2015 (5.7 percent for the region) to between 5.4 percent and 7.9 percent in March 2016 (5.7 percent for the region). Unemployment was lowest in Lee County and highest in Macon. Bullock and Macon counties' unemployment rates were above the state's 6.2 percent rate.

Annual unemployment rates for 2000 to 2015 are shown in Figure 8.1. The region's unemployment rates were low before the last recession, which raised the region's unemployment rate to 10.6 percent in 2009. As the economy recovers, the unemployment rate has declined, albeit at a slow

[3] Alabama labor force information is available from the Labor Market Information (LMI) Division of the Alabama Department of Labor. LMI compiles data in cooperation with the U.S. Bureau of Labor Statistics.

pace. By 2015, the region's unemployment rate was down to 5.7 percent. Year-to-date monthly labor force data point to about the same regional unemployment rate for 2016 as seen in 2015, but is expected to be slightly lower. The last recession and structural changes in the economy are expected to keep unemployment above pre-recession period for a few more years.

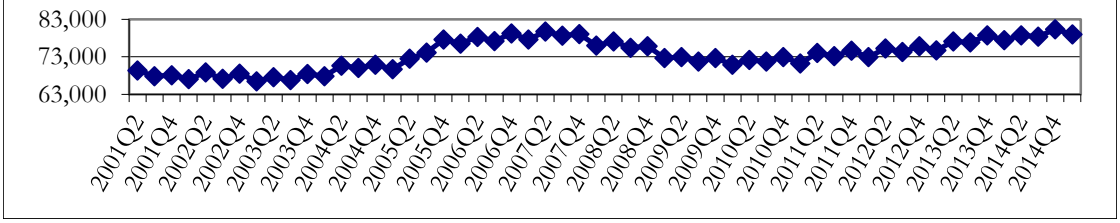
Figure 8.1 Region 8 Unemployment Rate



Source: Alabama Department of Labor.

Nonagricultural employment of the region's residents averaged 73,587 jobs quarterly from the second quarter of 2001 to the first quarter of 2015 (Figure 8.2). The number of jobs reached a high of 79,743 jobs in the second quarter 2007, but the last recession caused employment to drop to 70,864 jobs in first quarter 2010. Since then, the number of jobs has gradually edged upwards. In the fourth quarter of 2014 employment was 80,336, surpassing pre-recession levels, before dropping to 79,011 in the first quarter of 2015.

Figure 8.2 Region 8 Nonagricultural Employment



Source: Alabama Department of Labor and U.S. Census Bureau.

Table 8.2 shows worker distribution by age in Region 8 for the first quarter of 2015. The region's workforce is younger than the state's. Older workers, age 55 and over, are 18.5 percent of the region's nonagricultural employment compared to 21.0 percent for Alabama. Those who are age 65 and over constitute 4.5 percent of nonagricultural employment versus 4.9 percent for the state. Even so, labor force participation of younger residents must increase to meet long term occupational projections for growth and replacement otherwise older workers may have to work longer.

Table 8.2 Workers by Age Group (First Quarter 2015)

	Nonagricultural Employment	
Age Group	Number	Percent
14-18	1,520	1.9
19-24	12,584	15.9
25-34	18,223	23.1
35-44	16,183	20.5
45-54	15,850	20.1
55-64	11,130	14.1
65+	3,522	4.5
55 and over total	14,652	18.5
Total all ages	79,012	100.0

Note: Rounding errors may be present. Nonagricultural employment is by place of work not residence.
Source: U.S. Census Bureau, Local Employment Dynamics Program.

Commuting Patterns

In 2005 more residents commuted out of the region for work than nonresidents who commuted in; the number of in- and out-commuters was 51,725 and net out-commuters were 8,673 (Table 8.3). In 2006 net outflow shrunk to 4,280 as economic development successes yielded more jobs in the region. The most recent recession and military base realignment at Fort Benning in Georgia lowered regional employment causing commuter outflow to rise significantly. Consequently, net outflow rose to 16,618 in 2014. Lee County has the largest share of in- and out-commuters. Table 8.3 also shows that average commute times and distances rose in 2015 compared to 2014, implying that congestion worsened. Congestion is likely to remain a major issue as the regional economy recovers and population grows due to the military BRAC program. Regional transportation infrastructure and systems must be maintained and developed to ensure a smooth flow of goods and movement of workers. Impeding the mobility of workers and goods can delay or slow economic recovery.

Population

The Region 8 population count of 259,775 for 2010 is 9.5 percent more than was recorded in 2000 (Table 8.4). The region's population grew faster in this decade than Alabama's 7.5 percent growth rate. Population grew in two counties but shrank in the other three. Population growth was fastest in Lee County, which also added the most residents. Bullock, Chambers, and Macon counties' population declined over the decade. The 2015 estimates portray a similar trend with the regional population growing by 8.0 percent since 2010 census compared to 1.7 percent growth for Alabama. Russell and Lee counties registered the highest growth while population declined in the other three.

Table 8.5 shows Region 8's population counts, estimates, and projections by age group. The population aged 65 and over is expected to grow rapidly, with the first of the baby boom generation having turned 65 in 2011. Consequently, growth of the prime working age group (20-64) and youth (0-19) will lag that of the total population through 2030. This poses a challenge for workforce development. If employment growth outpaces labor force growth as is expected in the long term, communities that experience rapid job gains may need to consider investments in amenities and infrastructure to attract new residents.

Table 8.3 Commuting Patterns

Year	Region 8 Inflow	Region 8 Outflow
	Number	Number
2005	21,526	30,199
2006	23,687	27,967
2007	24,749	35,483
2008	25,770	35,394
2009	23,524	37,909
2010	26,564	37,016
2011	26,252	41,767
2012	23,998	43,478
2013	24,997	43,482
2014	26,307	42,925

Region 8 Counties	Inflow, 2014		Outflow, 2014	
	Number	Percent	Number	Percent
Bullock	1,847	4.8	2,601	4.7
Chambers	4,252	11.1	9,941	18.1
Lee	22,406	58.4	22,953	41.7
Macon	2,625	6.8	5,651	10.3
Russell	7,265	18.9	13,867	25.2

	Percent of workers					
Average commute time (one-way)	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
Less than 20 minutes	53.97	55.5	56.0	51.5	57.9	41.4
20 to 40 minutes	29.21	30.0	32.6	33.0	26.8	38.1
40 minutes to an hour	13.33	12.2	6.9	9.8	11.5	11.3
More than an hour	1.27	0.7	1.2	1.7	0.4	2.5
Average commute distance (one-way)	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
Less than 10 miles	45.78	42.6	42.3	45.7	44.9	33.2
10 to 25 miles	31.49	38.6	40.2	33.9	33.0	35.4
25 to 45 miles	15.58	13.8	11.4	14.2	17.2	19.3
More than 45 miles	5.5	4.7	5.2	5.2	2.6	9.4

Note: Rounding errors may be present.

Source: U.S. Census Bureau; Alabama Department of Labor; and Center for Business and Economic Research, The University of Alabama.

Table 8.4 Region 8 Population

	1990 Census	2000 Census	2010 Census	2015 Estimate	Change 2000-2010	% change 2000-2010	Change 2010-2015	% change 2010-2015
Bullock	11,042	11,714	10,914	10,696	-800	-6.8	-218	-2.0
Chambers	36,876	36,583	34,215	34,123	-2,368	-6.5	-92	-0.3
Lee	87,146	115,092	140,247	156,993	25,155	21.9	16,746	11.9
Macon	24,928	24,105	21,452	19,105	-2,653	-11.0	-2,347	-10.9
Russell	46,860	49,756	52,947	59,660	3,191	6.4	6,713	12.7
Region 8	206,852	237,250	259,775	280,577	22,525	9.5	20,802	8.0
Alabama	4,040,587	4,447,100	4,779,736	4,858,979	332,636	7.5	79,243	1.7
United States	248,709,873	281,421,906	308,745,538	321,418,820	27,323,632	9.7	12,673,282	4.1

Source: Center for Business and Economic Research, The University of Alabama and U.S. Census Bureau.

Table 8.5 Population by Age Group and Projections

Age Group	2000	2010	2012	2022	2030
0-19	69,621	71,330	71,330	79,177	81,598
20-24	27,638	29,842	32,363	31,667	33,597
25-29	17,086	18,509	19,837	20,511	20,532
30-34	15,353	15,731	17,500	19,196	20,232
35-39	16,528	15,982	15,910	18,598	19,813
40-44	16,496	15,923	16,697	17,493	19,041
45-49	15,093	17,152	16,799	17,087	19,143
50-54	13,491	17,070	17,430	17,316	17,104
55-59	10,582	15,248	16,182	17,838	17,602
60-64	8,646	13,346	14,097	17,854	17,086
65+	26,716	29,642	32,005	46,037	56,964
20-64 Total	140,913	158,803	166,815	177,560	184,150
Total Population	237,250	259,775	270,150	302,774	322,712
Change from 2012					
0-19				11.0%	14.4%
20-64				6.4%	10.4%
Total Population				12.1%	19.5%

Source: Center for Business and Economic Research, The University of Alabama and U.S. Census Bureau.

Per Capita Income

Per capita income (PCI) in Region 8 was $31,644 in 2014 (Figure 8.3), up 27.1 percent from 2005, but $5,868 or 16.0 percent below the state average of $37,512. Lee County had the highest PCI with $33,064 and Bullock had the lowest with $26,934.

Figure 8.3 Region 8 Per Capita Income

Source: U.S. Bureau of Economic Analysis and Center for Business and Economic Research, The University of Alabama.

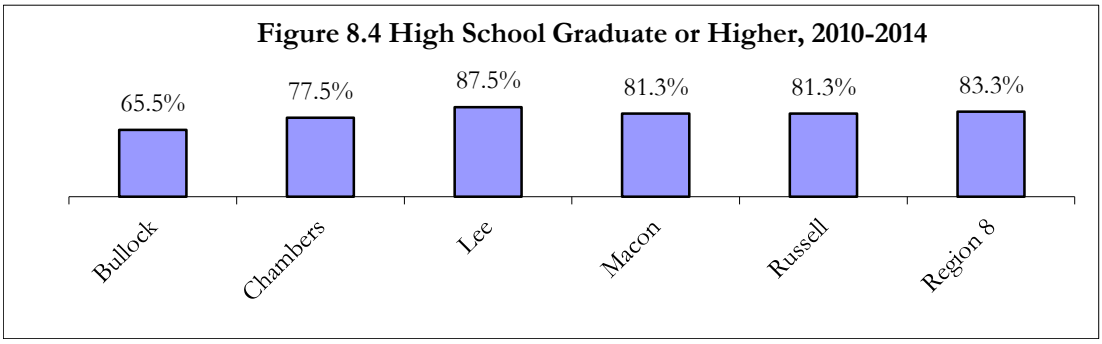
Educational Attainment

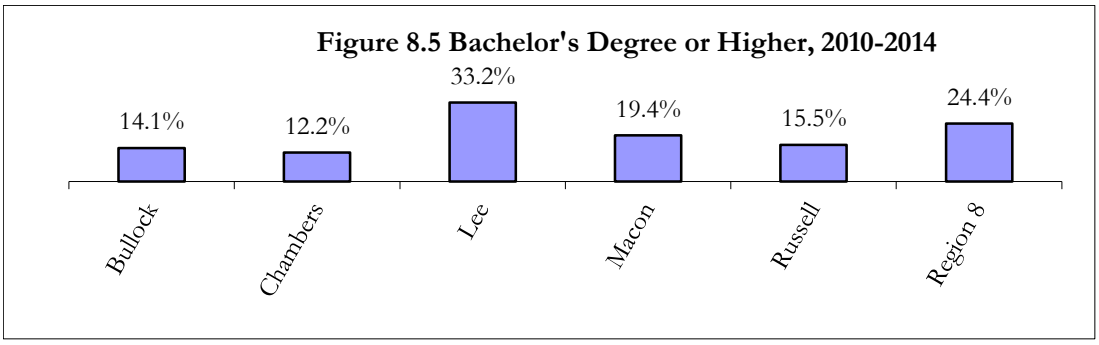
Educational attainment in 2010 to 2014 of Region 8 residents who were 25 years old and over is shown in Figures 8.4 and 8.5 and Table 8.6. About 83.0 percent graduated from high school and about 24.0 percent held a bachelor's or higher degree. Lee County has higher educational attainment than the other four counties. Bullock County has the lowest percent of population with a high school diploma or higher and Chambers had the smallest with a bachelor's degree or higher. Educational attainment is important as skills rise with education and high-wage jobs for the 21st century demand more skill sets.

Table 8.6 Educational Attainment of Population 25 Years and Over, 2010-2014

	Bullock	Chambers	Lee	Macon	Russell	Region 8
Total	7,283	23,821	85,595	12,609	37,235	166,543
No schooling completed	349	364	795	218	541	2,267
Nursery to 4th grade	190	148	550	102	292	1,282
5th and 6th grade	117	314	775	116	556	1,878
7th and 8th grade	358	697	1,253	359	1,038	3,705
9th grade	215	902	1,638	157	690	3,602
10th grade	550	1,184	2,104	352	1,403	5,593
11th grade	384	1,080	2,318	586	1,711	6,079
12th grade, no diploma	348	678	1,243	466	728	3,463
High school graduate/equivalent	2,353	8,885	22,256	3,822	12,119	49,435
Some college, less than 1 year	91	1,526	5,026	639	2,773	10,055
Some college, 1 + years, no degree	1,022	3,411	12,782	2,634	6,422	26,271
Associate degree	280	1,721	6,408	716	3,207	12,332
Bachelor's degree	432	1,855	16,049	1,210	3,854	23,400
Master's degree	361	768	7,911	809	1,459	11,308
Professional school degree	199	196	1,587	222	291	2,495
Doctorate degree	34	92	2,900	201	151	3,378

Source: Center for Business and Economic Research, The University of Alabama and U.S. Census Bureau.





Source: Center for Business and Economic Research, The University of Alabama and U.S. Census Bureau.

Underemployment and Available Labor

Labor force data are often limited to information on the employed and the unemployed that is available from government sources. However, this information is not complete from the perspective of employers. New or expanding employers are also interested in underemployment because current workers are potential employees. In fact, experience requirements in job ads are evidence that many prospective employers look beyond the unemployed for workers.

Workers in occupations that underutilize their experience, training, and skills are underemployed. These workers might look for other work because their current wages are below what they believe they can earn or because they wish to not be underemployed. Underemployment occurs for various reasons including (i) productivity growth, (ii) spousal employment and income, and (iii) family constraints or personal preferences. Underemployment is unique to areas because of the various contributing factors combined with each area's economic, social, and geographic characteristics.

The existence of underemployment identifies economic potential that is not being realized. It is extremely difficult to measure this economic potential because of uncertainties regarding additional income that the underemployed can bring to an area. It is clear, however, that underemployment provides opportunities for selective job creation and economic growth. A business that needs skills prevalent among the underemployed could locate in places that have such workers regardless of those areas' unemployment rates. A low unemployment rate, which may falsely suggest limited labor availability, is therefore not a hindrance to the business.

The underemployed present a significant labor pool because they tend to respond to job opportunities that they believe are better for reasons that include (i) higher income, (ii) more benefits, (iii) superior terms and conditions of employment, and (iv) a better match with skills, training, and experience. The underemployed also create opportunities for entry level workers as they leave lower-paying jobs for better-paying ones. Even if their previously-held positions are lost or not filled (perhaps due to low unemployment or adverse economic conditions), there is economic growth in gaining higher-paying jobs. Such income growth boosts consumption, savings, and tax collections. Quantifying the size of the underemployed is a necessary first step in considering this group for economic development, workforce training, planning, and other purposes. It is important to note that the underemployed can take on more responsibilities and earn more income, but they cannot be counted on to address possible future worker shortages as they are already employed.

Region 8 had an underemployment rate of 25.3 percent in 2015. Applying this rate to March 2016 labor force data means that 29,591 employed residents were underemployed (Table 8.7). Adding the unemployed gives a total available labor pool of 36,692 for the region. This is 5.2 times the number of unemployed and is a more realistic measure of the available labor pool in the region. Prospective employers must be able to offer the underemployed higher wages, better benefits or terms of employment, or some other incentives to induce them to change jobs. Underemployment rates ranged from 19.5 percent for Bullock County to 33.3 percent for Macon. Bullock County had the smallest available labor pool and Lee had the largest. The underemployed are willing to commute longer for a better job though they are not enthusiast about traveling longer distances. For the one-way commute, 38.6 percent are prepared to travel 20 or more minutes longer and 28.1 percent will go 20 or more extra miles.

Table 8.7 Underemployed and Available Labor by County

	Region 8	Bullock	Chambers	Lee	Macon	Russell
Labor Force	124,016	4,684	15,015	72,151	7,891	24,275
Employed	116,915	4,385	14,136	68,287	7,270	22,837
Underemployment rate	25.3%	19.5%	25.5%	20.0%	33.3%	30.4%
Underemployed workers	29,591	856	3,609	13,657	2,423	6,949
Unemployed	7,101	299	879	3,864	621	1,438
Available labor pool	**36,692**	**1,155**	**4,488**	**17,521**	**3,044**	**8,387**

Note: Rounding errors may be present. Based on March 2016 labor force data and 2015 underemployment rates.
Source: Center for Business and Economic Research, The University of Alabama and Alabama Department of Labor.

Underemployment rates for counties, Workforce Development Regions (WDRs), and the state were determined from an extensive survey on the state's workforce. A total of 411 complete responses were obtained from Region 8. About 59.0 percent (241 respondents) were employed, of whom 61 respondents stated that they were underemployed. Low wages at available jobs; a lack of job opportunities in their area, living too far from jobs, other family or personal obligations, a spouse having a really good job, and child care responsibilities are the primary reasons given for being underemployed. Ongoing economic development efforts can help in this regard. Nonworkers cite retirement and disability or other health concerns as the main reasons for their status, but many also cite a lack of job opportunities in their area, social security limitations, and other undisclosed reasons as additional reasons. Such workers may become part of the labor force if their problems can be addressed. Indeed a recent study found that the flow of labor force nonparticipants to employment status was 60.0 percent more than that of unemployed workers who gain employment.[4] This implies that the region's available labor pool could be larger than estimated in this report.

A comparison of underemployed workers to the overall workforce in Region 8 shows that:

- Fewer work full-time and more of the part-timers would like to work full-time.
- More hold multiple jobs.
- They have longer commute times and distances.
- More work in computer and mathematical; healthcare practitioners and technicians; health care support; food preparation and serving related; personal care service; sales related; production; and transportation and material moving occupations.
- They have shorter job tenure and earn less.
- More work in agriculture, forestry, fishing, and hunting; utilities; retail trade; transportation and warehousing; manufacturing; health care and social assistance; and accommodation and food services industries.
- Fewer believe their jobs fit well with their education and training, skills, and experience.
- More believe they are qualified for a better job.
- More would leave their current jobs for higher income.
- More are willing to commute longer times and distances for a better job.
- Fewer are satisfied with their current jobs.

[4] Canon, M.E., Kudlyak, M., and Reed, M. (2014). Not Everyone Who Joins the Ranks of the Employed was "Unemployed", *The Regional Economist*, January.

- More have sought better jobs in the preceding quarter.
- More are willing to train for a better job even if they have to pay all of the cost.
- They are slightly younger and have lower educational attainment.
- Fewer are married and more are female.
- More are African-Americans or other nonwhite ethnicity groups.

Table 8.8 shows the detailed survey results on job satisfaction and willingness to train. Responses for overall job satisfaction as well as satisfaction with various aspects of the job were obtained. In general, most of the region's workers (75.3 percent) are satisfied or completely satisfied with their jobs. Workers are most satisfied with the work they do and least satisfied with the earnings they receive. Fewer underemployed workers are satisfied with their jobs (55.7 percent). The underemployed are also most satisfied with the work they do and most dissatisfied with their earnings.

Workers are generally willing to train for a new or better job, with the underemployed being more willing (63.2 percent vs. 51.0 percent). However, the willingness to train is strongly influenced by who pays for the cost of training. Workers typically do not wish to pay for the training and so their willingness is highest when the cost is fully borne by government and lowest when the trainee must pay the full costs. In every case of cost burden considered, the underemployed are more willing to train for the new or better job. The results show that workers expect the government to bear at least part of the training cost. This expectation may result from worker awareness of government workforce programs that provide such assistance.

Table 8.8 Job Satisfaction and Willingness to Train (Percent)

Job Satisfaction					
	Completely Dissatisfied	Dissatisfied	Neutral	Satisfied	Completely Satisfied
Employed					
Overall	3.8	5.9	15.1	27.2	48.1
Earnings	12.1	11.3	23.4	28.5	23.4
Retention	2.9	4.2	14.6	21.3	55.2
Work	1.7	1.7	6.7	33.1	56.9
Hours	6.3	5.0	8.8	18.0	61.5
Shift	2.5	4.2	8.4	17.6	66.5
Conditions	1.7	4.6	15.5	31.0	47.3
Commuting Distance	7.1	6.7	10.0	17.2	58.6
Underemployed					
Overall	13.1	14.8	16.4	36.1	19.7
Earnings	29.5	19.7	26.2	18.0	6.6
Retention	8.2	6.6	24.6	24.6	34.4
Work	4.9	6.6	11.5	36.1	41.0
Hours	16.4	6.6	13.1	16.4	47.5
Shift	4.9	11.5	9.8	19.7	54.1
Conditions	4.9	9.8	24.6	34.4	26.2
Commuting Distance	11.5	18.0	9.8	18.0	42.6

Willingness to Train					
	Completely Unwilling	Unwilling	Neutral	Willing	Completely Willing
Employed					
For a new or better job	24.7	4.1	19.1	8.8	42.3
If paid by trainee	41.8	22.6	19.9	4.8	8.9
If paid by trainee and government	15.1	11.0	36.3	17.1	18.5
If paid by government	4.1	2.7	10.3	16.4	66.4
Underemployed					
For a new or better job	14.0	7.0	14.0	3.5	59.7
If paid by trainee	30.6	28.6	18.4	6.1	16.3
If paid by trainee and government	22.5	8.2	22.5	22.5	24.5
If paid by government	6.1	2.0	6.1	14.3	71.4

Note: Rounding errors may be present.

Source: Center for Business and Economic Research, The University of Alabama.

Workforce Demand

Industry Mix

The educational services sector was the leading employer with 12,592 jobs in the first quarter of 2015 (Table 8.9). Rounding out the top five industries by employment are manufacturing; retail trade; health care and social assistance; and accommodation and food services. These five industries provided 53,261 jobs, 67.4 percent of the regional total. The average monthly wage across all industries in the region was $2,644; three leading employers paid more than this average but were not the highest paying sectors. New hire monthly earnings averaged $1,739, roughly 66.0 percent of the region's average monthly wage. The highest average monthly wages were for mining at $4,836, utilities at $4,732, and wholesale trade and finance and insurance with $3,727. Accommodation and food services paid the least at $1,151. Mining also had the highest average monthly new hire wages with $4,590, followed by wholesale trade at $3,064 and utilities at $3,047. Arts, entertainment, and recreation paid newly hired workers the least, $860.

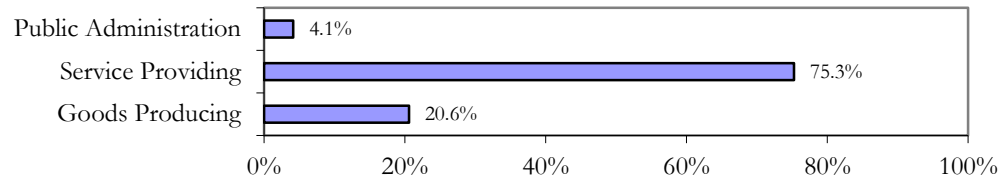
Table 8.9 Industry Mix (First Quarter 2015)

Industry by 2-digit NAICS Code	Total Employment	Share	Rank	Average Monthly Wage	Average Monthly New Hire Earnings
11 Agriculture, Forestry, Fishing and Hunting	848	1.07%	15	$2,982	$2,047
21 Mining	104	0.13%	20	$4,836	$4,590
22 Utilities	630	0.80%	18	$4,732	$3,047
23 Construction	2,728	3.45%	9	$3,165	$2,668
31-33 Manufacturing	12,583	15.93%	2	$3,561	$2,795
42 Wholesale Trade	1,228	1.55%	13	$3,727	$3,064
44-45 Retail Trade	9,752	12.34%	3	$1,934	$1,314
48-49 Transportation and Warehousing	2,983	3.78%	8	$2,685	$1,832
51 Information	690	0.87%	17	$2,966	$1,230
52 Finance and Insurance	1,675	2.12%	11	$3,727	$1,998
53 Real Estate and Rental and Leasing	1,145	1.45%	14	$2,695	$2,134
54 Professional, Scientific, and Technical Services	2,044	2.59%	10	$3,360	$2,472
55 Management of Companies and Enterprises	222	0.28%	19	$2,902	$1,609
56 Administrative and Support and Waste Management and Remediation Services	5,936	7.51%	6	$1,472	$1,417
61 Educational Services	12,592	15.94%	1	$3,023	$1,445
62 Health Care and Social Assistance	9,425	11.93%	4	$2,926	$2,274
71 Arts, Entertainment, and Recreation	744	0.94%	16	$1,877	$860
72 Accommodation and Food Services	8,909	11.28%	5	$1,151	$955
81 Other Services (Except Public Administration)	1,500	1.90%	12	$2,212	$1,686
92 Public Administration	3,273	4.14%	7	$2,827	$1,876
ALL INDUSTRIES	**79,011**	**100.00%**		**$2,644**	**$1,739**

Source: Alabama Department of Labor and U.S. Census Bureau.

By broad industry classification, service providing industries generated 75.3 percent of jobs in first quarter 2014 (Figure 8.6). Goods producing industries were next with 20.6 percent and public administration accounted for 4.1 percent. The distribution is for all nonagricultural jobs in the region, but there is significant variation by county.

Figure 8.6 Region 8 Employment Distribution



Source: Alabama Department of Labor and U.S. Census Bureau.

Job Creation and Net Job Flows

On average, 3,683 jobs were created per quarter from second quarter 2001 to first quarter 2015 (Figure 8.7). Quarterly net job flows averaged 426 in the same period and generally followed the job creation pattern (Figure 8.8). Both job creation and net job flows have fluctuated since fourth quarter of 2007 but rose to prerecession levels in the first and third quarters of 2013. After dropping in the fourth quarter of 2013, net job flows and job creation rose up in first, second, and third quarter of 2014 but dropped in fourth quarter of 2014. Job creation rose in the first quarter of 2015 while net job flows continued to drop. Since the first quarter of 2001, quarterly net job flows have ranged from a loss of 1,486 to a gain of 2,440. Job creation refers to the number of new jobs that are created either by new area businesses or through the expansion of existing firms. Net job flows reflect the difference between current and previous employment at all businesses.

Figure 8.7 Job Creation in Region 8

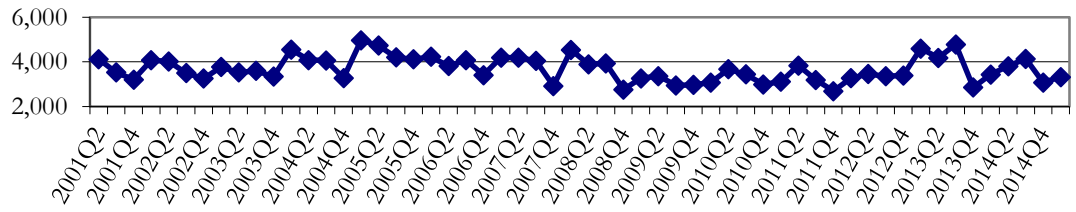
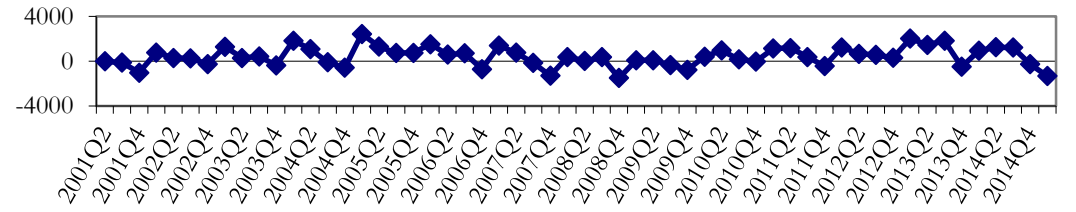


Figure 8.8 Region 8 Net Job Flows



Source: Alabama Department of Labor and U.S. Census Bureau.

High-Demand, Fast-Growing, High-Earning, and Sharp-Declining Occupations

Workforce Development Region 8 has 570 single occupations based on 2012 to 2022 occupational projections. Table 8.10 shows the 40 occupations that are expected to be in high-demand, ranked by projected average annual job openings over the projection period. Many of these occupations are common to one of the five largest employment sectors identified earlier (Table 8.9): health care and social assistance. Thus, this sector will continue to dominate employment in the region.

The top five high-demand occupations are Registered Nurses; Team Assemblers; Helpers—Production Workers; General and Operations Managers; and Licensed Practical and Licensed Vocational Nurses. Twelve of the high-demand occupations are also fast-growing. This means that these 12 occupations have a minimum annual growth rate of 1.84 percent, much faster than the regional and state occupational growth rates of 1.02 percent and 0.99 percent, respectively.

The 20 fastest growing occupations ranked by projected growth of employment are listed in Table 8.11. The top five fast-growing occupations are Aircraft Mechanics and Service Technicians; Health Educators; Personal Care Aides; Social and Community Service Managers; and Market Research Analysts and Marketing Specialists.

Table 8.12 shows the 50 selected highest earning occupations in the region. These occupations are mainly in management, health, engineering, computer, postsecondary education, and science fields. Of the top 10 high-earning occupations, four are in health, two are in management, and two more are in social sciences and related workers. Any discussion of earnings must consider that wages vary with experience. Occupations with the highest entry wages may not necessarily have the highest average or experienced wages.

The selected high-earning occupations are generally not fast-growing or in high-demand. Fifteen occupations are both high-earning and in high-demand (Table 8.10). The following four occupations are in high-demand, fast-growing, and high-earning:

1. Health Specialties Teachers, Postsecondary
2. Computer Programmers
3. Nurse Practitioners
4. Occupational Therapists

Of the region's 570 occupations, 30 are expected to decline over the 2012 to 2022 period. Employment in the 20 sharpest declining occupations will fall by at least six percent, with each losing a minimum of 10 jobs (Table 8.13). No efforts should be made to sustain these occupations because they are declining as a result of structural changes in the economy of the region.

Table 8.10 Selected High-Demand Occupations (Base Year 2012 and Projected Year 2022)

Occupation	Average Annual Job Openings		
	Total	Due to Growth	Due to Separations
Registered Nurses	55	20	30
Team Assemblers	50	30	20
Helpers--Production Workers	30	20	10
General and Operations Managers	**25**	**10**	**15**
Licensed Practical and Licensed Vocational Nurses	25	10	15
Personal Care Aides*	25	20	5
Computer User Support Specialists	20	10	10
Counter and Rental Clerks	20	10	10
Industrial Machinery Mechanics	20	10	15
Health Specialties Teachers, Postsecondary*	**15**	**10**	**5**
First-Line Supervisors of Construction Trades and Extraction Workers	15	10	5
Carpenters	15	10	5
Electricians	15	5	5
Bus Drivers, Transit and Intercity	15	10	5
Pharmacists	**10**	**5**	**5**
Pharmacy Technicians	10	10	5
Heating, Air Conditioning, and Refrigeration Mechanics and Installers	10	5	5
Electrical Power-Line Installers and Repairers	10	5	5
Computer and Information Systems Managers	**5**	**0**	**0**
Construction Managers	**5**	**5**	**5**
Medical and Health Services Managers	**5**	**5**	**5**
Social and Community Service Managers*	5	0	0
Management Analysts	**5**	**5**	**0**
Market Research Analysts and Marketing Specialists*	5	0	0
Computer Programmers*	**5**	**5**	**5**
Electrical Engineers	**5**	**0**	**0**
Industrial Engineers	**5**	**0**	**5**
Mechanical Engineers	5	0	5
Mental Health and Substance Abuse Social Workers*	5	5	0
Health Educators*	5	0	0
Nursing Instructors and Teachers, Postsecondary	**5**	**5**	**0**
Public Relations Specialists	5	5	0
Occupational Therapists*	**5**	**0**	**0**
Physical Therapists	**5**	**5**	**5**
Speech-Language Pathologists	**5**	**0**	**0**
Nurse Practitioners*	**5**	**0**	**0**
Dental Hygienists*	5	0	0
Diagnostic Medical Sonographers*	5	0	0
Physical Therapist Assistants*	5	0	0
Real Estate Sales Agents	5	5	0

Note: Occupations are growth- and wages-weighted and data are rounded to the nearest 5. Occupations in bold are also high-earning.

* - Qualify as both high-demand and fast-growing occupations.

Source: Alabama Department of Labor and Center for Business and Economic Research, The University of Alabama.

Table 8.11 Selected Fast-Growing Occupations (Base Year 2012 and Projected Year 2022)

Occupation	Employment		Percent Change	Annual Growth (Percent)	Average Annual Job Openings
	2012	2022			
Aircraft Mechanics and Service Technicians	NA	NA	467	17.46	5
Health Educators*	40	60	37	4.14	5
Personal Care Aides*	440	640	45	3.82	25
Social and Community Service Managers*	50	70	33	3.42	5
Market Research Analysts and Marketing Specialists*	50	70	33	3.42	5
Occupational Therapists*	**50**	**70**	**34**	**3.42**	**5**
Physical Therapist Assistants*	50	70	40	3.42	5
Medical Secretaries	100	140	32	3.42	5
Cement Masons and Concrete Finishers	50	70	30	3.42	5
Dental Hygienists*	80	110	30	3.24	5
Mental Health Counselors	110	150	32	3.15	5
Mental Health and Substance Abuse Social Workers*	110	150	37	3.15	5
Health Specialties Teachers, Postsecondary*	**320**	**430**	**34**	**3.00**	**15**
Computer-Controlled Machine Tool Operators, Metal and Plastic	NA	NA	37	2.92	15
Nurse Practitioners*	**60**	**80**	**29**	**2.92**	**5**
Helpers--Electricians	60	80	37	2.92	5
Home Health Aides	200	260	32	2.66	10
Computer Programmers*	**100**	**130**	**29**	**2.66**	**5**
Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders	70	90	35	2.54	5
Diagnostic Medical Sonographers*	50	60	34	1.84	5

Note: Employment data are rounded to the nearest 10 and job openings are rounded to the nearest 5. Occupations in bold are also high-earning.

* - Qualify as both high-demand and fast-growing occupations. NA - Not available.

Source: Alabama Department of Labor and Center for Business and Economic Research, The University of Alabama.

Table 8.12 Selected High-Earning Occupations (Base Year 2012 and Projected Year 2022)

Occupation	Employment		Annual Growth (Percent)	Average Annual Job Openings	Mean Annual Salary ($)
	2012	2022			
Physicians and Surgeons, All Other	150	180	1.84	5	241,426
Family and General Practitioners	30	30	0.00	0	190,294
Economists	NA	NA	0.00	0	141,345
Clinical, Counseling, and School Psychologists	60	70	1.55	5	123,710
Nurse Anesthetists	NA	NA	0.00	0	123,602
Management Analysts*	140	180	2.54	5	119,211
Pharmacists*	270	320	1.71	10	117,575
Education Administrators, Postsecondary	230	260	1.23	10	112,156
Business Teachers, Postsecondary	150	170	1.26	5	110,062
Chief Executives	NA	NA	0.00	5	109,146
General and Operations Managers*	840	950	1.24	25	109,036
Financial Managers	130	150	1.44	5	103,852
Computer and Information Systems Managers*	70	90	2.54	5	102,573
Architectural and Engineering Managers	40	50	2.26	0	102,566
Natural Sciences Managers	NA	NA	0.00	0	100,511
Chemical Engineers	30	30	0.00	0	98,974
Purchasing Managers	30	40	2.92	0	96,480
Lawyers	210	240	1.34	5	94,174
Computer Science Teachers, Postsecondary	50	50	0.00	0	92,315
Medical and Health Services Managers*	130	160	2.10	5	91,764
Administrative Services Managers	20	30	4.14	0	90,549
Public Relations and Fundraising Managers	30	40	2.92	0	89,657
Sales Managers	50	50	0.00	0	89,515
Health Specialties Teachers, Postsecondary*	**320**	**430**	**3.00**	**15**	**88,814**
Veterinarians	70	80	1.34	5	87,289
Managers, All Other	230	250	0.84	5	87,278
Software Developers, Applications	30	40	2.92	0	86,364
Human Resources Managers	40	50	2.26	0	84,163
Coaches and Scouts	170	210	2.14	10	83,336
Physician Assistants	20	20	0.00	0	83,270
Geoscientists, Except Hydrologists and Geographers	NA	NA	0.00	0	83,082
Physical Therapists*	120	150	2.26	5	83,022
Construction Managers*	200	230	1.41	5	79,721
Industrial Production Managers	180	180	0.00	5	79,524
Education Administrators, Elementary and Secondary School	190	200	0.51	5	78,742
Mathematical Science Teachers, Postsecondary	NA	NA	0.80	5	77,353
Computer Programmers*	**100**	**130**	**2.66**	**5**	**77,213**
Nurse Practitioners*	**60**	**80**	**2.92**	**5**	**76,980**
Transportation, Storage, and Distribution Managers	30	30	0.00	0	76,787
Health and Safety Engineers, Except Mining Safety Engineers and Inspectors	20	20	0.00	0	75,980
Electrical Engineers*	50	70	3.42	5	75,397
Industrial Engineers*	100	110	0.96	5	75,215
Physics Teachers, Postsecondary	50	60	1.84	0	73,792
Postmasters and Mail Superintendents	20	20	0.00	0	73,234
Occupational Therapists*	**50**	**70**	**3.42**	**5**	**73,184**
Environmental Engineers	40	50	2.26	0	72,931
First-Line Supervisors of Non-Retail Sales Workers	140	140	0.00	0	72,649
Nursing Instructors and Teachers, Postsecondary*	100	120	1.84	5	71,622
Speech-Language Pathologists*	60	80	2.92	5	71,358
Biological Science Teachers, Postsecondary	NA	NA	1.44	5	71,301

Note: Employment data are rounded to the nearest 10; openings to the nearest 5. The salary data provided are based on the May 2014 release of the Occupational Employment Statistics (OES) combined employment and wage file. Estimates for specific occupations may include imputed data. Occupations in bold are also fast-growing. NA – Not available.

* - Qualify as both high-earning and high-demand occupations.

Source: Center for Business and Economic Research, The University of Alabama and Alabama Department of Labor.

Table 8.13 Selected Sharp-Declining Occupations (Base Year 2012 and Projected Year 2022)

Occupation	Employment		Net Change	Percent Change
	2012	2022		
Farmers, Ranchers, and Other Agricultural Managers	1,350	1,120	-230	-17
Postal Service Mail Carriers	220	170	-50	-23
Paper Goods Machine Setters, Operators, and Tenders	250	230	-20	-9
Molding, Coremaking, and Casting Machine Setters, Operators, and Tenders, Metal and Plastic	220	200	-20	-6
Data Entry Keyers	220	200	-20	-9
Sewing Machine Operators	90	70	-20	-28
Textile Knitting and Weaving Machine Setters, Operators, and Tenders	60	40	-20	-28
Tire Builders	60	50	-10	-9
Graders and Sorters, Agricultural Products	60	50	-10	-10
Power Plant Operators	NA	NA	-10	-9
Floral Designers	50	40	-10	-12
Meter Readers, Utilities	50	40	-10	-15
Switchboard Operators, Including Answering Service	50	40	-10	-20
Textile Winding, Twisting, and Drawing Out Machine Setters, Operators, and Tenders	50	40	-10	-28
Postal Service Clerks	40	30	-10	-27
Fallers	30	20	-10	-45
Railroad Brake, Signal, and Switch Operators	20	10	-10	-7
Ushers, Lobby Attendants, and Ticket Takers	NA	NA	-10	-13
Postal Service Mail Sorters, Processors, and Processing Machine Operators	20	10	-10	-24

Note: Employment data are rounded to the nearest 10. NA - Not available.

Source: Alabama Department of Labor and Center for Business and Economic Research, The University of Alabama.

Skills and Skills Gap Analyses

Jobs require skill sets and it is necessary that jobholders have the relevant skills. Table 8.14 shows skill types and definitions as provided by O*NET Online, which offers skill sets for all occupations ranked by the degree of importance. High-earning occupations typically require skills that are obtained in the pursuit of the high educational attainment levels that such jobs require. Lower earning occupations require more basic skill sets. Some occupations have no minimum skill set requirements (e.g. dishwashers and maids).

Table 8.15 shows the percentage of selected occupations in the region that list a particular skill as primary. We define primary skills as the 10 most important skills in the required skill set for an occupation. It is important to note that a particular skill may be more important and more extensively used in one occupation than another. Table 8.15 does not address such cross-occupational skill importance comparisons. In general, basic skills are most frequently listed as primary, which means that they are important for practically all jobs.

Table 8.14 Skill Types and Definitions

Basic Skills: Developed capacities that facilitate learning or the more rapid acquisition of knowledge.

Active Learning — Understanding the implications of new information for both current and future problem-solving and decision-making.

Active Listening — Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.

Critical Thinking — Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions, or approaches to problems.

Learning Strategies — Selecting and using training/instructional methods and procedures appropriate for the situation when learning or teaching new things.

Mathematics — Using mathematics to solve problems.

Monitoring — Monitoring /Assessing performance of yourself, other individuals, or organizations to make improvements or take corrective action.

Reading Comprehension — Understanding written sentences and paragraphs in work-related documents.

Science — Using scientific rules and methods to solve problems.

Speaking — Talking to others to convey information effectively.

Writing — Communicating effectively in writing as appropriate for the needs of the audience.

Complex Problem Solving Skills: Developed capacities used to solve novel, ill-defined problems in complex, real-world settings.

Complex Problem Solving — Identifying complex problems and reviewing related information to develop and evaluate options and implement solutions.

Resource Management Skills: Developed capacities used to allocate resources efficiently.

Management of Financial Resources — Determining how money will be spent to get the work done and accounting for these expenditures.

Management of Material Resources — Obtaining and seeing to the appropriate use of equipment, facilities, and materials needed to do certain work.

Management of Personnel Resources — Motivating, developing, and directing people as they work, identifying the best people for the job.

Time Management — Managing one's own time and the time of others.

Social Skills: Developed capacities used to work with people to achieve goals.

Coordination — Adjusting actions in relation to others' actions.

Instructing — Teaching others how to do something.

Negotiation — Bringing others together and trying to reconcile differences.

Persuasion — Persuading others to change their minds or behavior.

Service Orientation — Actively looking for ways to help people.

Social Perceptiveness — Being aware of others' reactions and understanding why they react as they do.

Systems Skills: Developed capacities used to understand, monitor, and improve socio-technical systems.

Judgment and Decision Making — Considering the relative costs and benefits of potential actions to choose the most appropriate one.

Systems Analysis — Determining how a system should work and how changes in conditions, operations, and the environment will affect outcomes.

Systems Evaluation — Identifying measures or indicators of system performance and the actions needed to improve or correct performance, relative to the goals of the system.

Technical Skills: Developed capacities used to design, set-up, operate, and correct malfunctions involving application of machines or technological systems.

Equipment Maintenance — Performing routine maintenance on equipment and determining when and what kind of maintenance is needed.

Equipment Selection — Determining the kind of tools and equipment needed to do a job.

Installation — Installing equipment, machines, wiring, or programs to meet specifications.

Operation and Control — Controlling operations of equipment or systems.

Operation Monitoring — Watching gauges, dials, or other indicators to make sure a machine is working properly.

Operations Analysis — Analyzing needs and product requirements to create a design.

Programming — Writing computer programs for various purposes.

Quality Control Analysis — Conducting tests and inspections of products, services, or processes to evaluate quality or performance.

Repairing — Repairing machines or systems using the needed tools.

Technology Design — Generating or adapting equipment and technology to serve user needs.

Troubleshooting — Determining causes of operating errors and deciding what to do about it.

Source: O*NET Online (http://online.onetcenter.org/skills/).

Table 8.15 Percentage of Selected Occupations for Which Skill Is Primary

	Selected High-Demand Occupations	Selected Fast-Growing Occupations	Selected High-Earning Occupations
Basic Skills			
Active Learning	43	40	46
Active Listening	93	95	86
Critical Thinking	93	100	88
Learning Strategies	10	10	20
Mathematics	5	0	14
Monitoring	68	80	54
Reading Comprehension	75	75	78
Science	10	10	18
Speaking	80	85	84
Writing	45	40	52
Complex Problem Solving Skills			
Complex Problem Solving	43	45	60
Resource Management Skills			
Management of Financial Resources	0	0	2
Management of Material Resources	0	0	0
Management of Personnel Resources	10	5	24
Time Management	43	45	24
Social Skills			
Coordination	58	50	38
Instructing	18	20	22
Negotiation	5	0	12
Persuasion	8	10	8
Service Orientation	33	40	16
Social Perceptiveness	58	60	36
Systems Skills			
Judgment and Decision Making	50	50	72
Systems Analysis	3	0	6
Systems Evaluation	5	5	6
Technical Skills			
Equipment Maintenance	5	5	0
Equipment Selection	3	0	0
Installation	3	0	0
Operation and Control	8	15	0
Operation Monitoring	8	15	0
Operations Analysis	8	5	8
Programming	3	5	4
Quality Control Analysis	10	25	2
Repairing	5	10	0
Technology Design	0	0	0
Troubleshooting	8	10	0

Note: Rounding errors may be present.

Source: O*NET Online and Center for Business and Economic Research, The University of Alabama.

High-earning occupations require more active learning, learning strategies, math, reading comprehension, science, writing, personnel resource management, instructing, negotiation, judgment and decision making, and operations analysis skills than both high-demand and fast-growing jobs. These are skills that require long training periods and higher educational attainment. However, high-earning jobs involve less technical skills. High-demand occupations need somewhat more basic, resource management, and systems skills than fast-growing occupations; but slightly less technical skills.

Table 8.16 shows skill gap indexes for all 35 skills in Table 8.14 based on a previous projection period (2008 to 2018). Skills gap indexes range up to 100 and are standardized measures of the gap between current supply and projected demand. The index does not provide any information about current or base year skill supply. Its focus is on the projection period and it identifies critical skill needs. The index essentially ranks expected training needs. The higher the index the more critical is the skill over the specified projection period.

For policy and planning purposes, skill gap indexes have to be considered together with replacement indexes, which are the expected shares of job openings due to replacement. Although the skills gap indexes are for a previous projection period, they are applicable to current projections. Replacement is necessary because of turnover and people leaving the labor force. The smaller the replacement index, the larger the share of job openings due to growth, which in turn implies a need to increase the pace of skill training. Skill gap indexes point to the need to ramp up the scale of skill training while replacement indexes address the pace of training.

By skill type, the skill gap indexes show that for Region 8 basic skills are most critical followed by social, complex problem solving, resource management, system, and technical skills. The importance of basic skills generally and for high-demand, high-growth, and high-earning jobs indicates a strong need for training in these skills. The pace of training needs to increase for technical, systems, and two basic (science and mathematics) skills. The scale of training should be raised for basic and social skills.

Education and Training Issues

Educational attainment in Region 8 is slightly lower than that of the state for high school graduates but higher for graduates with a bachelor's degree or higher. Of the population age 25 and over population, 83.3 percent had graduated from high school in 2010 to 2014, compared to 83.7 percent for Alabama. Those with a bachelor's or higher degree were 24.4 percent versus 23.1 percent for the state. Skill and education requirements for jobs keep rising. This highlights a strong need to raise educational attainment in the region.

Table 8.17 shows the number of selected occupations in the region for which a particular education/training category is most common. In general, high-earning occupations require high educational attainment levels; only four of the high-earning occupations do not require a bachelor's or higher degree. Twenty-five (63.0 percent) of the 40 high-demand occupations require an associate degree at the minimum and 21 (53.0 percent) require a bachelor's or higher degree. Twelve (60.0 percent) of the 20 fast-growing occupations require and associate degree at the minimum while nine (45.0 percent) require a bachelor's or higher degree.

The 2012 to 2022 occupational projections indicate that future jobs will require postsecondary education and training at a minimum. Job ads are increasingly requiring at least a high school diploma or GED. Of the region's 570 occupations, 20 are expected to decline sharply over the period and education and training for these should slow accordingly.

Table 8.16 Skills Gap Indexes (Base Year 2008 to Projected Year 2018)

Skill	Total Openings (Projected Demand)	Replacement Index	Skills Gap Index
Active Listening	1,295	58	100
Reading Comprehension	1,260	57	97
Critical Thinking	1,110	56	94
Active Learning	985	55	91
Speaking	980	56	89
Coordination	935	55	86
Instructing	985	56	83
Monitoring	885	57	80
Time Management	850	54	77
Writing	855	56	74
Social Perceptiveness	815	56	71
Learning Strategies	750	55	69
Persuasion	670	58	66
Service Orientation	650	56	63
Judgment and Decision Making	530	57	60
Complex Problem Identification	505	55	57
Mathematics	490	51	54
Equipment Selection	410	52	51
Negotiation	340	59	49
Management of Personnel Resources	355	62	46
Troubleshooting	285	51	43
Equipment Maintenance	285	53	40
Operation Monitoring	200	53	37
Quality control	150	40	34
Installation	180	53	31
Repairing	165	52	29
Management of Financial Resources	190	63	26
Operation and Control	135	52	23
Operations Analysis	100	55	20
Management of Material Resources	115	65	17
Science	60	67	14
Systems Evaluation	90	61	11
Systems Analysis	50	40	9
Technology Design	40	50	6
Programming	10	50	3

Note: The skills gap indexes are from 2008 to 2018 projection period and not 2012 to 2022.

Source: Alabama Department of Labor.

Table 8.17 Number of Selected Occupations by Education/Training Requirement

Most Common Education/Training Requirements Categories	Selected High-Demand Occupations	Selected Fast-Growing Occupations	Selected High-Earning Occupations
Doctoral Degree or First Professional Degree	3	1	13
Master's Degree	4	3	9
Bachelor's or Higher Degree Plus Work Experience	5	1	15
Bachelor's Degree	9	4	9
Associate Degree	4	3	0
Postsecondary Non-Degree Plus On-the-job Training	1	0	0
Postsecondary Non-Degree	1	1	0
Some College, no Degree Plus On-the-job Training	1	0	0
Some College, no Degree	0	0	0
High School Diploma Plus On-the-job Training	9	4	4
High School Diploma	0	0	0
Less than High School Plus On-the-job Training	3	3	0
Less than High School	0	0	0

Note: The on-the-job training refers to the typical on-the-job training needed to attain competency in the occupation in addition to the typical education needed for entry to the occupation. This could be long-term, moderate-term, or short-term on-the-job training. **Long-term** requires more than 12 months on-the-job training. **Moderate-term** requires one to 12 months of on-the-job training. **Short-term** requires up to one month of on-the-job training. These types of training are more common in occupations that require postsecondary non-degree or less educational attainment. Other types of on-the-job training requirements that may be needed but are not shown on the table are apprenticeship and internship/residency that are typical in certain professions many of which require higher educational attainment.

Source: O*NET Online; Center for Business and Economic Research, The University of Alabama; and Alabama Department of Labor.

Implications and Recommendations

Regional employment growth is currently low but is projected to be greater than the growth of the main working age population in the long term. From a 2012 base, worker shortfalls of 9,451 and 14,950 are estimated for 2022 and 2030, respectively (Table 8.18). Worker shortfalls may be somewhat underestimated because of BRAC-related troop increases and job opportunities at nearby Fort Benning in Georgia which are partially responsible for the expected population gains. A focus on both worker skills and the expected shortfall must be priorities for 2030. Worker shortfalls for critical occupations will need to be addressed as well.

Table 8.18 Expected Worker Shortfall

	2012-2020	2012-2030
Total population growth (percent)	12.1	19.5
Age 20-64 population growth (percent)	6.4	10.4
Job growth (percent)	17.8	28.3
Worker shortfall (percent)	11.3	17.9
Worker shortfall (number)	9,451	14,950

Source: Center for Business and Economic Research, The University of Alabama.

Employment is critical to economic development and so strategies to address worker skill needs and potential shortfalls for critical occupations must be adopted and implemented. Such strategies should aim at increasing labor force participation and raising worker productivity and might include: (1) improvements in education and its funding; (2) continuation and enhancement of programs to assess, retrain, and place dislocated workers; (3) focus on hard-to-serve populations (e.g. out-of-school youth); (4) lowering the high school dropout rate; (5) use of economic opportunities to attract new residents; (6) facilitation of in-commuting; and (7) encouragement of older worker participation in the labor force.

Improving education is vital because a highly educated and productive workforce is a critical economic development asset. The education and training requirements of high-demand, fast-growing, and high-earning occupations show the significance of education in developing the workforce of the future. The importance of basic skills generally and for high-demand, high-growth, and high-earning jobs demonstrates a strong need for training in these skills. In Region 8 the pace of training needs to increase for technical, systems, and two basic (science and mathematics) skills while the scale of training is raised for basic and social skills. Ideally, all high school graduates should possess basic skills so that postsecondary and higher education can focus on other and more complex skills while enhancing these basic skills. Employers should be an integral part of planning for training as they can help identify future skill needs and any existing gaps. Education and training for the 20 sharp-declining occupations in Table 8.13 should slow accordingly.

Another very important reason to improve education is that more educated people are more likely to work; data on worker participation and educational attainment show that labor force participation increases with worker education. Productivity also rises with education, which yields high private and social returns. Workforce development must view all of the education and other programs (e.g. adult education, career technical training, worker retraining, career readiness, etc.) as one system.

Funding to support workforce development may require tax reform at state and local levels and must provide for flexibility as workforce needs change over time and demand different priorities.

Programs to assess, retrain, and place dislocated workers—especially those affected by outsourcing and structural changes in the economy—should be continued and enhanced because they can improve the labor force participation rate. Hard-to-serve populations include out-of-school youth, persons in poverty, those receiving welfare, residents of sparsely populated areas, and those on active parole. These populations are often outside of the mainstream economy and are poor. They usually have difficulty finding work because they have low levels of educational attainment, lack occupational skills, or face geographic or other barriers. They are a potential human resource, but investment in training, transportation, child care, infrastructure, etc. may be needed to tap this resource.

In-migration is one way of growing the labor force as it helps population growth. The region's population growth rate is high and adequate to meet long term job demand. Further growth in employment demand could be served somewhat with in-commuting or a reduction in out-commuting. However, new residents can be attracted using higher-paying job opportunities from the region's economic development successes. Investment in amenities and infrastructure may be needed to support such growth. In-migration is generally more beneficial than in-commuting since it grows the economy faster and adds to the tax base.

Policies that facilitate and encourage older worker participation are needed as older workers can help meet the region's workforce challenges. Such policies could be related to income taxation, job flexibility, and retirement programs. As the share of older people in the population is projected to increase (see Table 8.5), it becomes even more important that they be active in the workforce. Older worker participation has been rising nationally since the early 1990s. This has been attributed to reasons including:

- Older workers can work longer because they are healthier
- The number of physically demanding jobs is falling
- Defined contribution plans are replacing pensions
- There are fewer employer-paid retiree health insurance programs
- Social security reforms affecting those born after 1938 (i) gradually raise the normal retirement age from 65 to 67, (ii) increase the rate at which monthly payments rise with delayed benefits, and (iii) eliminate the reduction in benefits for those working beyond the full retirement age.

Diversifying the region's economy will strengthen it. This demands that economic development also focus on retaining, expanding, and attracting businesses that provide more high-earning jobs. Current workers—including the underemployed—would welcome higher-earning opportunities. An economic development focus on diversification would require that workforce development pay attention to postsecondary and higher educational systems to ensure a ready and available workforce for new and expanding businesses. The higher incomes earned by graduates of these institutions will help raise personal income for the region and provide additional local (county and city) tax revenue. Raising personal income by improving educational attainment and technological skills is an effective economic development strategy, even for a region that has above average population and labor force growth rates. Together, workforce development and economic development can build a strong, well-diversified economy. Indeed, one cannot achieve success without the other.